# APPENDIX A

## A.1 System Requirements

The database was created using *Microsoft Access 2000*, which is required to view or edit the inventory. The electronic drawings are in "pdf" format, which requires *Adobe Acrobat Reader* to view. The database and electronic drawings must be copied onto a hard drive with the database ***not*** set as "read-only" to enable full functionality. The database and the electronic drawings folder must be stored in the same directory to enable viewing of the drawings from within the database. The electronic drawings folder must be named "PDF Drawings".

## A.2 Project Inventory – Main Form

The database opens to the Main Form, which provides options to proceed. See Figure A-1. An icon at the top of the form facilitates entering new projects.

The "Search Options" allow the user to search for specific projects or groups of projects by project name keyword or by category. The keyword can be multiple words but must be a single character string, as the database will search for that exact character string. The category search can be executed by specifying one or more of "Project Type", "River Basin", "Client/Owner" and "Constituency".

An abbreviated preview list of the current search appears when the search is executed. Clicking the box to the left of the project name will select the project. The user can then select "View Project" or "Edit Project" to open the Data View Form or Edit Form, which are described in Section A.3 below.

The "Reports" section of the form provides some options for printing inventoried project information. The "Search Result Summary" icon provides a list of projects. The "Search

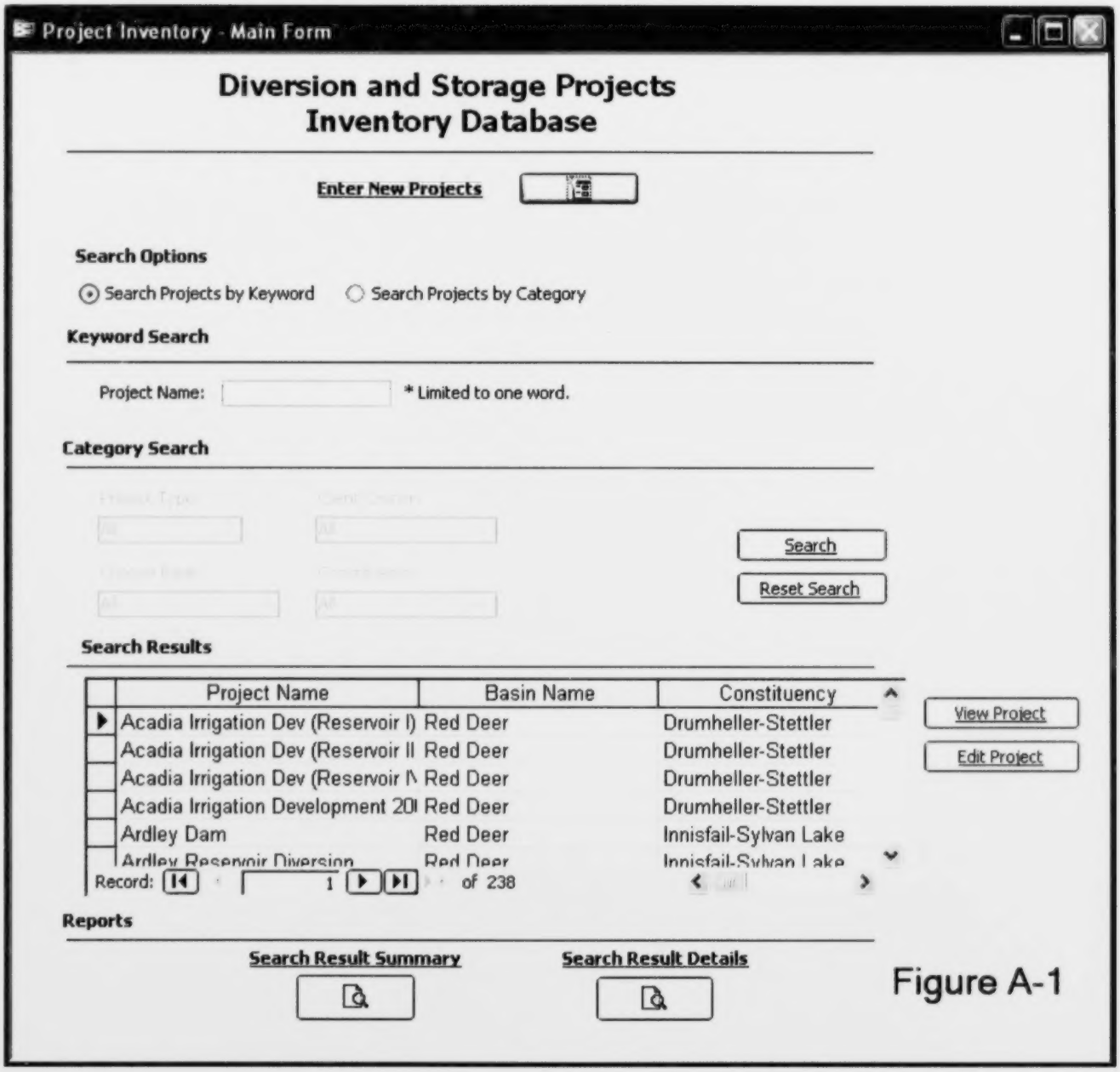
Project Inventory - Main Form
Diversion and Storage Projects
Inventory Database
Enter New Projects
Search Options
Search Projects by Keyword
Search Projects by Category
Keyword Search
Project Name:
* Limited to one word.
Category Search
Search
Reset Search
Search Results
Project Name
Basin Name
Constituency
Acadia Irrigation Dev (Reservoir I) Red Deer Drumheller-Stettler
Acadia Irrigation Dev (Reservoir II Red Deer Drumheller-Stettler
Acadia Irrigation Dev (Reservoir I\ Red Deer Drumheller-Stettler
Acadia Irrigation Development 20I Red Deer Drumheller-Stettler
Ardley Dam Red Deer Innisfail-Sylvan Lake
Ardley Reservoir Diversion Red Deer Innisfail-Sylvan Lake
Record: 1 of 238
View Project
Edit Project
Reports
Search Result Summary
Search Result Details

Figure A-1

Result Details" icon provides a complete printout of all project information. Clicking one of the print icons opens a print preview screen from which printing can be executed.

### A.3 Data View and Edit Forms

Upon selection of one of the "View Project" or "Edit Project" options from the Project Inventory – Main Form, the database will open the Data View or Data Edit Form (see Figure A-2). The Data Edit Form is the same form as the Data View Form, with the only difference being the ability to make changes to the data. A blank data entry form will open if the user is entering a new project. These forms contain all the data for each inventoried project.

Each project is referred to as a "Record" in *Microsoft Access*. In the bottom left corner of the form, the number of records (projects) is indicated and the adjacent arrows can be clicked to navigate through the records.

The Data View / Edit Form is split into the four sub-forms "Project Information – Main", "Project Details – Page 1", "Project Details – Page 2", and "Drawings" as indicated by the tabs at the top of the form.

Help boxes appear when the cursor arrow is moved over the various data entry fields. "Drop down" lists are provided for many of the data entry fields. Typed data will also "auto complete" from the selections in the "drop down" list. In many fields, the user also has the option to type in custom information. However, this should be avoided for any fields that are included in the "category search" options in the Main Form, because the project would be excluded from search results.

A print icon on the right side of the form facilitates printing all data of the currently viewed record (project). An example printout of one project is included at the end of Appendix A.

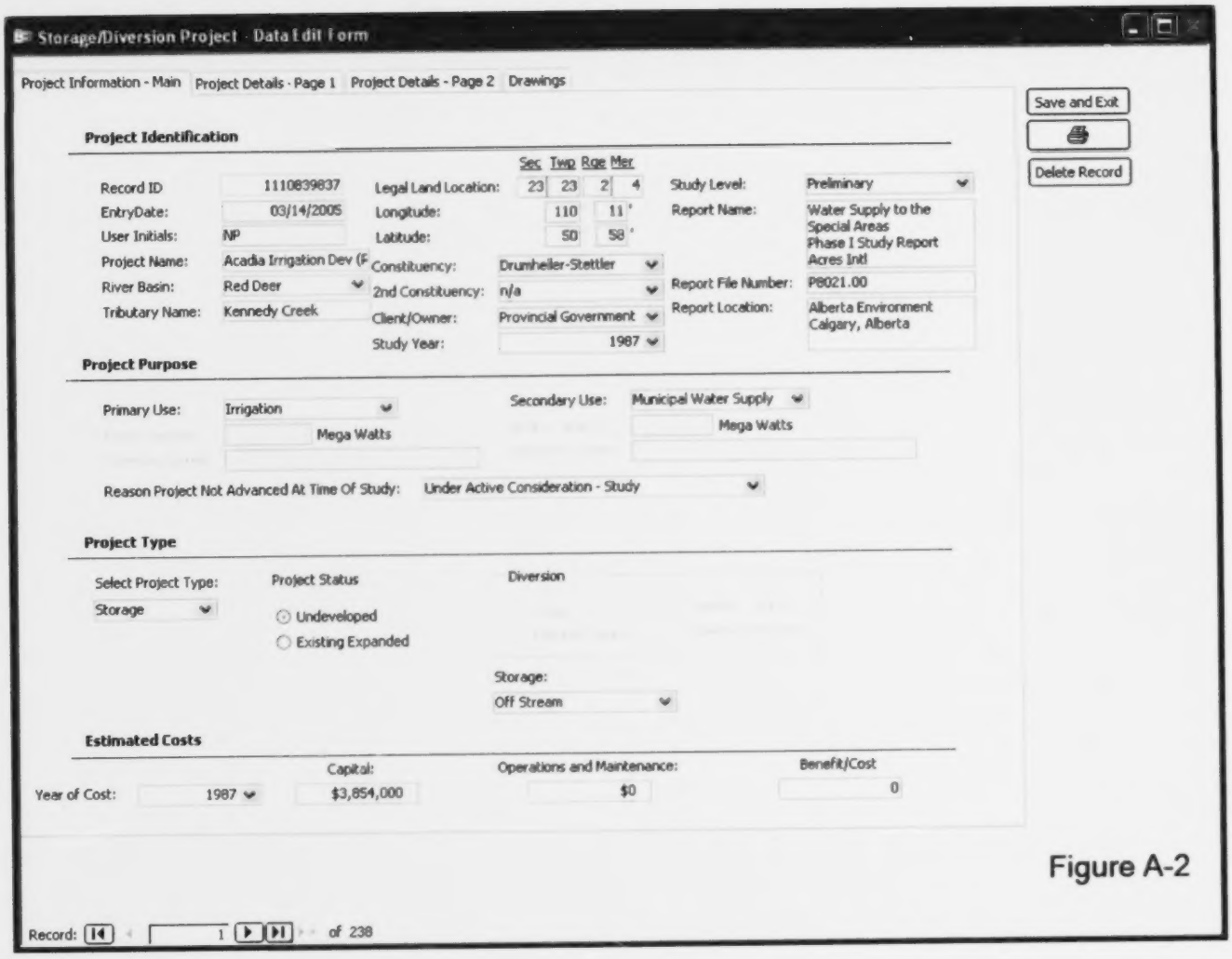
Storage/Diversion Project - Data Edit Form
Project Information - Main
Project Details - Page 1
Project Details - Page 2
Drawings
Save and Exit
Delete Record
Project Identification
Record ID
1110839837
EntryDate:
03/14/2005
User Initials:
NP
Project Name:
Acadia Irrigation Dev (F
River Basin:
Red Deer
Tributary Name:
Kennedy Creek
Legal Land Location:
Sec Twp Rge Mer
23 23 2 4
Longitude:
110 11 '
Latitude:
50 58 '
Constituency:
Drumheller-Stettler
2nd Constituency:
n/a
Client/Owner:
Provincial Government
Study Year:
1987
Study Level:
Preliminary
Report Name:
Water Supply to the Special Areas Phase I Study Report Acres Intl
Report File Number:
P8021.00
Report Location:
Alberta Environment Calgary, Alberta
Project Purpose
Primary Use:
Irrigation
Mega Watts
Secondary Use:
Municipal Water Supply
Mega Watts
Reason Project Not Advanced At Time Of Study:
Under Active Consideration - Study
Project Type
Select Project Type:
Storage
Project Status
Undeveloped
Existing Expanded
Diversion
Storage:
Off Stream
Estimated Costs
Year of Cost:
1987
Capital:
$3,854,000
Operations and Maintenance:
$0
Benefit/Cost
0
Record:
1
of 238

Figure A-2

*A.3.1 Sub-Form: "Project Information – Main" (refer to Figure A-2)*

The "Project Identification" section of the form provides general information such as data entry date, user, project name, river basin, site location, owner of report, study year, study level, and report name and location. The land location is typically the damsite or main body of the reservoir for storage projects, and the diversion point for diversion projects. Locations were estimated in cases where the information did not indicate an exact location.

The "Project Purpose" section of the form provides the intended use information and the reason why the project was not advanced at the time of the study.

The "Project Type" section of the form indicates project type (storage or diversion), project status (undeveloped site or expansion of an existing site), and general information about the type of diversion or storage project.

The "Estimated Costs" section of the form contains capital cost, operation and maintenance costs, benefit/cost ratio and year of cost estimate.

*A.3.2 Sub-Form: "Project Details – Page 1" (refer to Figure A-3)*

The "Dams" section of the form provides information such as the number of dams and dykes, the dam fill type and whether the proposed dam would be new or an existing raised dam. Length and height of dam as well as general comments are entered if information is available. The database handles multiple dam records to accommodate projects with several dams and/or dykes.

The "Spillways" and "Low Level/Riparian Outlet" sections of the form provide any available information such as spillway type, capacity and design event.

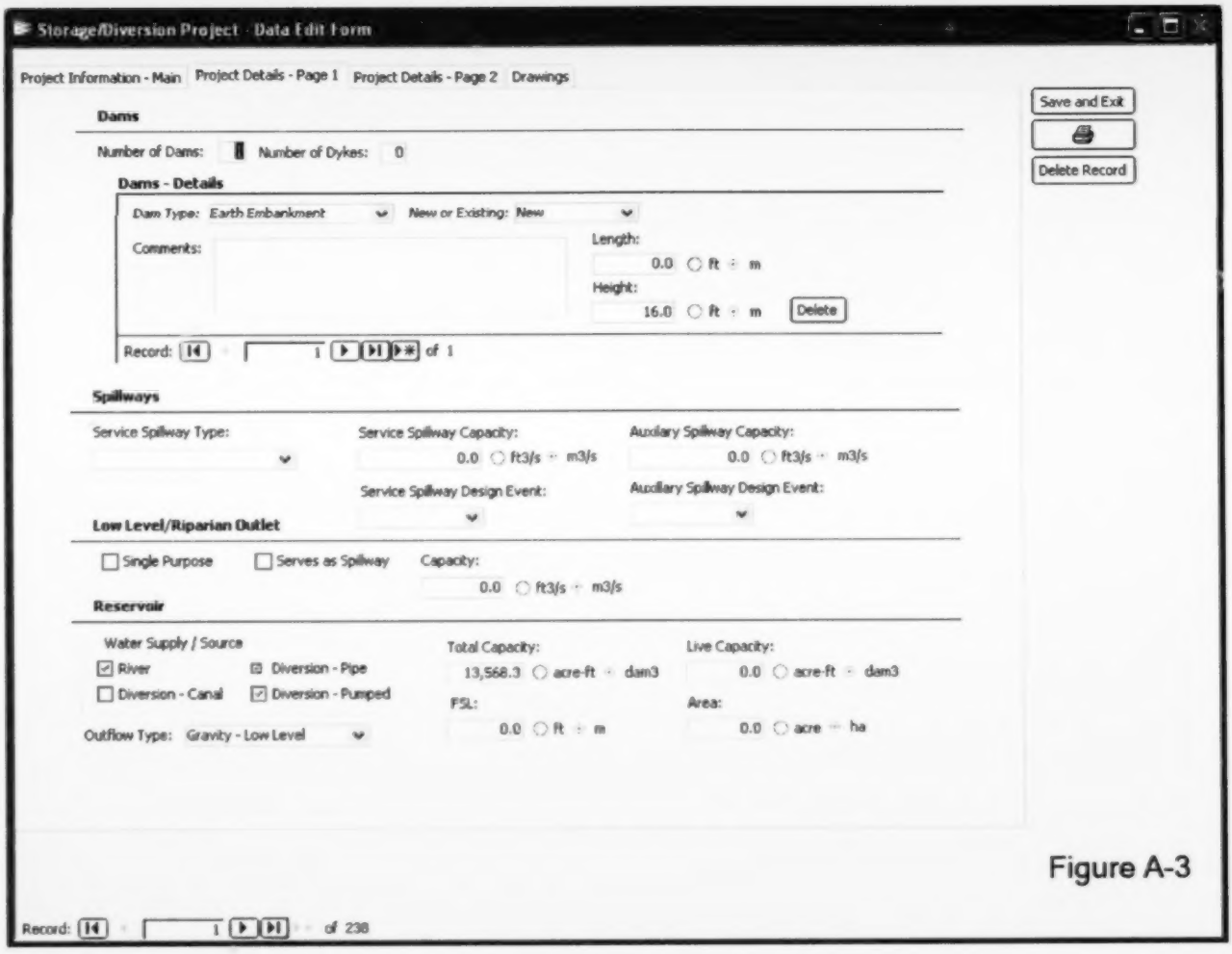
Storage/Diversion Project - Data Edit Form
Project Information - Main
Project Details - Page 1
Project Details - Page 2
Drawings
Save and Exit
Delete Record
Dams
Number of Dams: 1
Number of Dykes: 0
Dams - Details
Dam Type: Earth Embankment
New or Existing: New
Comments:
Length:
0.0 ft m
Height:
16.0 ft m
Delete
Record: 1 of 1
Spillways
Service Spillway Type:
Service Spillway Capacity:
0.0 ft3/s m3/s
Auxiliary Spillway Capacity:
0.0 ft3/s m3/s
Service Spillway Design Event:
Auxiliary Spillway Design Event:
Low Level/Riparian Outlet
Single Purpose
Serves as Spillway
Capacity:
0.0 ft3/s m3/s
Reservoir
Water Supply / Source
River
Diversion - Pipe
Diversion - Canal
Diversion - Pumped
Outflow Type: Gravity - Low Level
Total Capacity:
13,568.3 acre-ft dam3
FSL:
0.0 ft m
Live Capacity:
0.0 acre-ft dam3
Area:
0.0 acre ha
Record: 1 of 238

Figure A-3

The "Reservoir" section of the form provides reservoir information such as water source, storage volume, surface area, full supply level (FSL) and outflow type.

*A.3.3 Sub-Form: "Project Details – Page 2" (refer to Figure A-4)*

The "Diversion Systems" section of the form provides diversion details such as number and type of diversions, number of pump stations, capacity, length and description of the diversion start and end. The database handles multiple diversion records to accommodate projects with several diversions from one source. A long complex diversion system may also be easily split into segments.

The "Impact Assessments" section of the form indicates whether environmental, sociological, historical, infrastructure or land ownership reviews were included in the report.

The "Site Investigations" and "Hydrology" sections of the form indicate the level of geotechnical, survey/mapping and hydrology completed in the report.

The "Licensing Information" section of the form indicates available information regarding water license status and application date, if applicable. No license information was found for any of the inventoried projects to date. This information can be entered into the database at a future date, if desired.

*A.3.4 Sub-Form: "Drawings" (refer to Figure A-5)*

The "Drawings Contained in Report" section of the form indicates the level of the drawings (i.e. conceptual, preliminary, etc.), if any exist.

The "Available Electronic Drawings" section of the form lists the drawings that have been scanned and are electronically linked to the database. These drawings can be

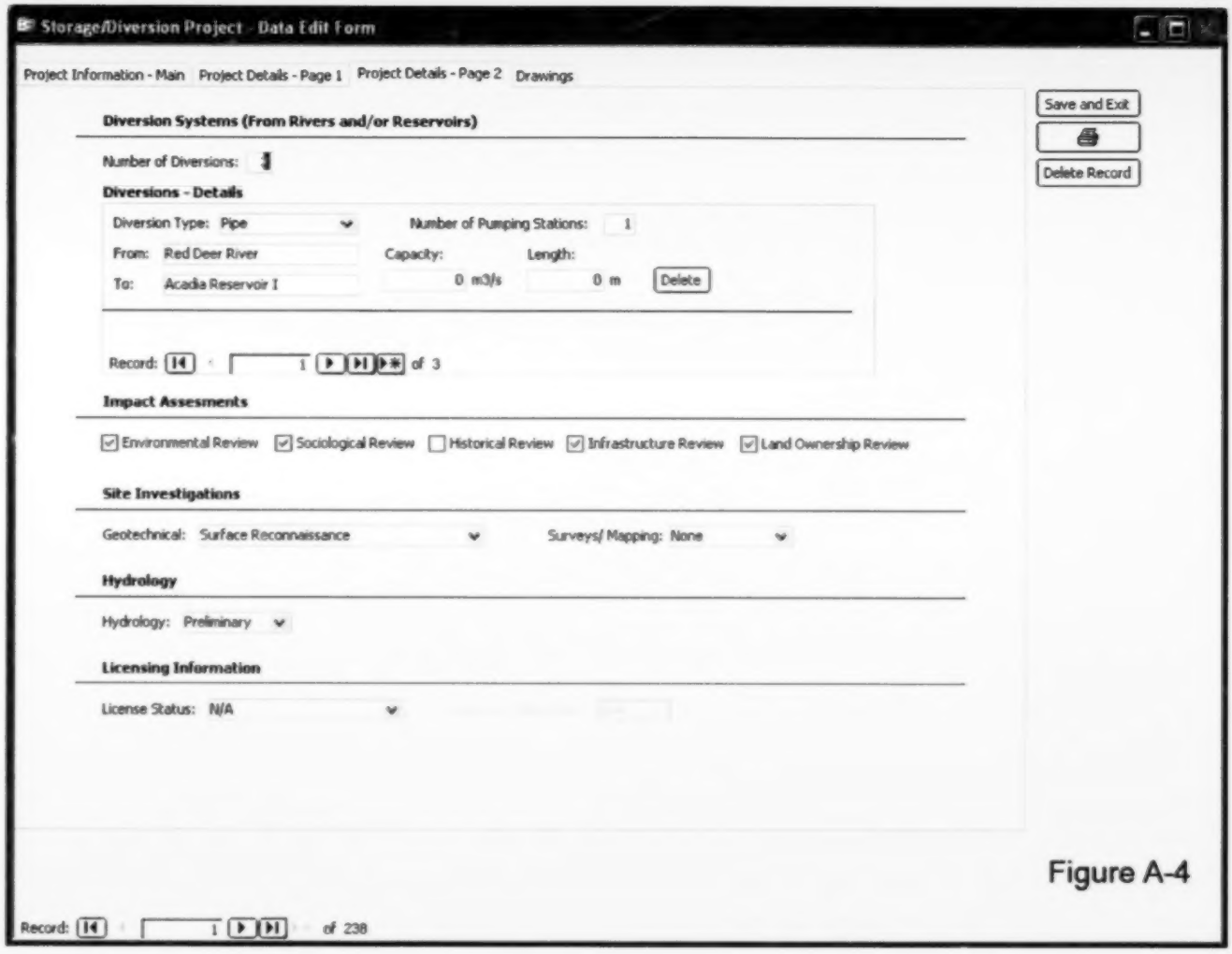
Storage/Diversion Project - Data Edit Form
Project Information - Main
Project Details - Page 1
Project Details - Page 2
Drawings
Save and Exit
Delete Record
Diversion Systems (From Rivers and/or Reservoirs)
Number of Diversions: 1
Diversions - Details
Diversion Type: Pipe
Number of Pumping Stations: 1
From: Red Deer River
Capacity:
Length:
To: Acadia Reservoir I
0 m3/s
0 m
Delete
Record: 1 of 3
Impact Assesments
Environmental Review
Sociological Review
Historical Review
Infrastructure Review
Land Ownership Review
Site Investigations
Geotechnical: Surface Reconnaissance
Surveys/ Mapping: None
Hydrology
Hydrology: Preliminary
Licensing Information
License Status: N/A
Record: 1 of 238

Figure A-4

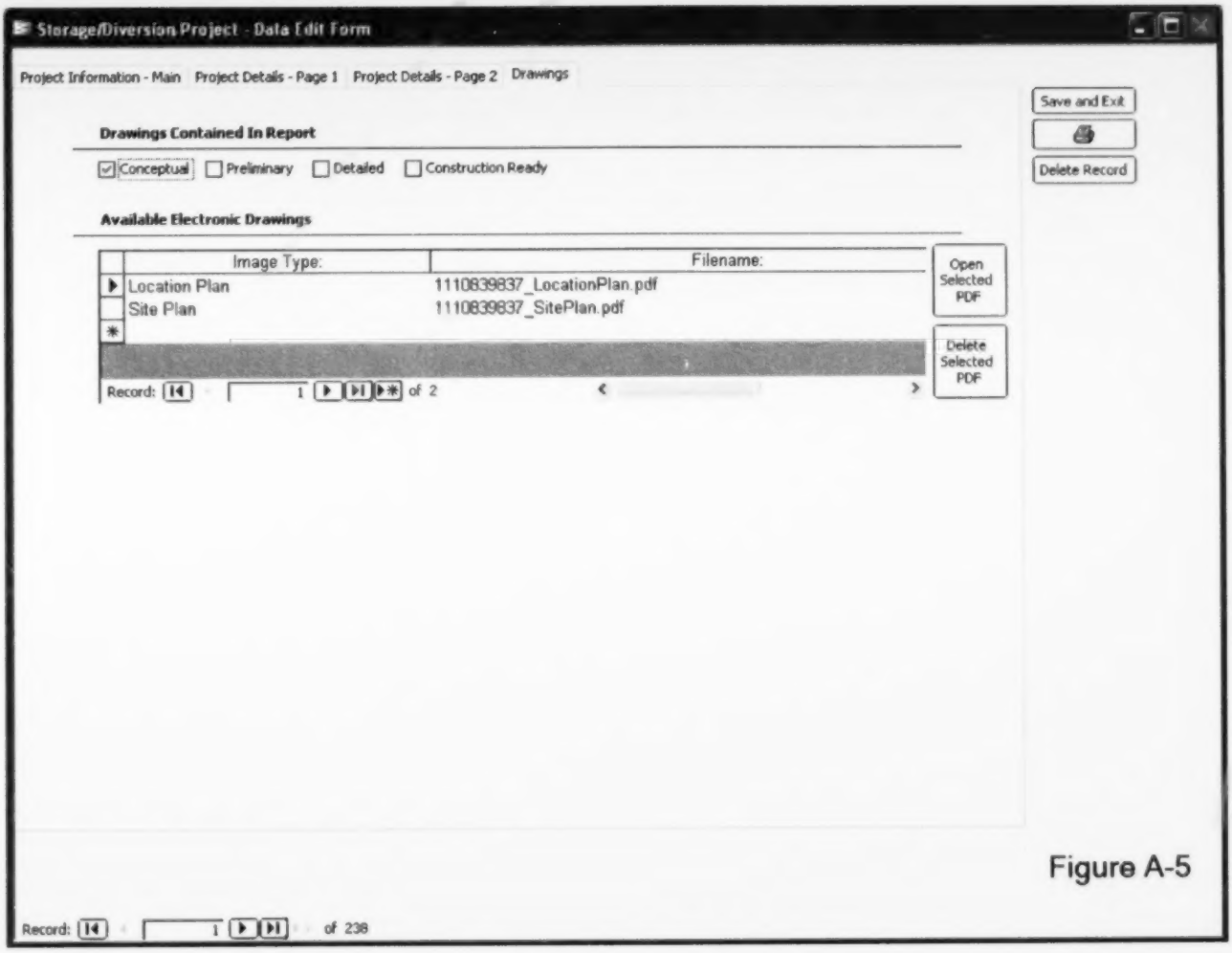
Storage/Diversion Project - Data Edit Form
Project Information - Main
Project Details - Page 1
Project Details - Page 2
Drawings
Save and Exit
Delete Record
Drawings Contained In Report
Conceptual
Preliminary
Detailed
Construction Ready
Available Electronic Drawings
Image Type:
Filename:
Location Plan
1110839837_LocationPlan.pdf
Site Plan
1110839837_SitePlan.pdf
Open Selected PDF
Delete Selected PDF
Record: 1 of 2
Record: 1 of 238

Figure A-5

viewed by selecting one, then clicking the "Open Selected PDF" icon. In a few projects, the entire report document has been included.

New electronic drawings can be added in the future by selecting a new "Image Type" from the drop-down list or by typing in a custom-named "Image Type". Upon completing this, the database will automatically assign a file name. The new file must have this exact file name and be stored in the "PDF Drawings" folder.

**Project Printout Example**

# Acadia Irrigation Development 2005 - Scenario 3

## Project Identification

| | | | |
|---|---|---|---|
| **Entry Date** | 05/24/2005 | **Legal Land Location** (Sec: Twp: Rge: Mer:) | 20 - 23 - 3 - 4 |
| **Project Name** | Acadia Irrigation Development 2005 - Scenario 3 | **Longitude** | 110° 23' |
| **Basin Name** | Red Deer | **Latitude** | 50° 59 ' |
| **Tributary Name** | | **Constituency** | Drumheller-Stettler |
| **Report Name** | MD of Acadia #34 Irrigation Development Study MPE, 2005 | **2nd Constituency** | n/a |
| | | **Client/Owner** | Municipal Government |
| | | **Study Year** | 2005 |
| **Report Location** | MPE Engrg Calgary | **Study Level** | Feasiblility |
| | | **Report File Number** | MPE #2280-001-00 |

## Project Purpose

| | | | |
|---|---|---|---|
| **Primary Use** | Irrigation | **Secondary Use** | Municipal Water Supply |
| **Hydro Capacity (MW)** | | **Hydro Capacity (MW)** | |
| **Diversion System** | | **Diversion System** | |

**Reason Project Not Advanced At Time Of Study**: Under Active Consideration - Study

## Project Type

| | | | |
|---|---|---|---|
| **Project Type** | Storage | **Project Status** | Undeveloped |
| **Diversion Types** | | **Storage Type** | Off Stream |

## Estimated Costs

| | | | |
|---|---|---|---|
| **Year** | 2004 | **Capital** | $96,100,000 |
| **Operations And Maintenance** | $2,860,000 | **Cost Benefit** | 0.95 |

# Acadia Irrigation Development 2005 - Scenario 3

## Dams

| | | | |
|---|---|---|---|
| **Number of Dams** | 2 | **Number Of Dykes** | 0 |

| Dam Type | New or Existing | Height (m) | Length (m) | Comments |
|---|---|---|---|---|
| Earth Embankment | New | 30.5 | 2100 | East (Main) Dam |
| Earth Embankment | New | 14.5 | 330 | West Dam |

## Spillways

| | | | |
|---|---|---|---|
| **Service Spillway Type** | | | |
| **Service Spillway Capacity (m3/s)** | 0 | **Auxilary Spillway Capacity (m3/s)** | 0 |
| **Service Spillway Design Event** | | **Auxillary Spillway Design Event** | |

## Low Level / Riparian Outlet

| | | | |
|---|---|---|---|
| **Single Purpose** | ☑ | **Capacity (m3/s)** | 7.5 |
| **Serves as Spillway** | ☐ | | |

## Reservoir

| | | | |
|---|---|---|---|
| **Water Supply/ Source** | River,Diversion - Pipe,Diversion - Pumped, | | |
| **Outflow Type** | Gravity - Diversion | | |
| **Total Capacity (dam3)** | 22500 | **FSL (m)** | 728.5 |
| **Live Capacity (dam3)** | 17000 | **Area (ha)** | 219 |

## Diversion System

| | |
|---|---|
| **Number of Diversions** | 3 |

| Diversion Type | From | To | Number of Pumping Stations | Length (m) | Capacity (m3/s) |
|---|---|---|---|---|---|
| Pipe | Red Deer River | Reservoir A1 | 1 | 4800 | 4 |
| Pipe | Reservoir A1 | Secondary 'B' Pipeline System | 0 | 0 | 1 |
| Channel | Reservoir A1 | Secondary 'A' Network | 0 | 0 | 7.5 |

# Acadia Irrigation Development 2005 - Scenario 3

## Impact Assessments

| | | | | | |
|---|---|---|---|---|---|
| Environmental Review | ☑ | Sociological Review | ☑ | Historical Review | ☑ |
| Infrastructure Review | ☑ | Land Ownership Review | ☑ | | |

## Site Investigation

| | | | |
|---|---|---|---|
| Geotechnical | Surface Reconnaissance | Surveys/ Mapping | Contour Maps |
| Hydrology | Preliminary | | |

## Licensing Information

| | | | |
|---|---|---|---|
| License Status | N/A | Application Filed Date | N/A |

## Drawings Contained in Report

| | | | |
|---|---|---|---|
| Conceptual | ☑ | Preliminary | ☐ |
| Detailed | ☐ | Construction Ready | ☐ |

## Available Electronic Drawings

| Image Type | Filename |
|---|---|
| Cross Section - Dam | 4276979593_CrossSection-Dam.pdf |
| Cross Section - Outlets | 4276979593_CrossSection-Outlets.pdf |
| Site Plan2 | 4276979593_SitePlan2.pdf |
| Site Plan1 | 4276979593_SitePlan1.pdf |